

CLAIMS

1. A method for improving glucose control as measured by glycosylated hemoglobin (HbA1c) in blood from a patient comprising administering DHA to the patient on a periodic basis in an amount sufficient to reduce glycosylation levels of circulating hemoglobin the patient.
2. A method for treating diabetes comprising administering to an individual in need thereof an effective amount of DHA substantially contemporaneously with a second pharmaceutical.
3. The method of claim 1 wherein a second pharmaceutical is administered substantially contemporaneously with the DHA.
4. The method of claim 2 or 3 wherein the second pharmaceutical is an antidiabetic.
5. The method of claim 4, wherein the antidiabetic is insulin, a sulfonylurea, an alpha-glucosidase inhibitor, a biguanide, a meglitinide, or a thiazolidinedione, or combinations thereof.
6. The method of claim 5 wherein a hypoglycemic agent is administered in a dose less than the dose required to control blood glucose in the absence of DHA administration.
7. The method of claim 4, 5, or 6 further comprising a combination of two or more antidiabetics.
8. The method of claim 1 wherein the patient is prediabetic.
9. The method of claim 1 wherein onset of Type II diabetes mellitus is delayed.
10. The method of claim 1, wherein DHA is administered to a patient who exhibits fasting glucose between about 110 to about 127 mg/dL; fasting insulin greater than 6 μ U/ml; and a triglyceride/HDL-C ratio of greater than about 3; and/or HbA1c blood greater than about 7%; and said administration results in delayed onset of Type II diabetes mellitus; and glucose control as measured by FSIGT is improved and/or reduced blood HbA1c compared to a patient which has not received DHA.

11. The method of any preceding claim wherein the patient exhibits at least three symptoms selected from abdominal obesity, high triglycerides, low HDL cholesterol, high blood pressure and fasting glucose greater than 100 mg/dL.
12. The method of any preceding claim wherein the patient exhibits at least one of the following: fasting glucose between about 110 to about 127 mg/dL, fasting insulin greater than about 6 μ U/ml, triglyceride/HDL-C ratio of greater than about 3, and a blood HbA1c greater than 7%.
13. The method of any preceding claim wherein glucose control as measured by FSIGT is improved.
14. The method of any preceding claim wherein glucose control is improved according to an HbA1c.
15. The method of any preceding claim wherein blood HbA1c is reduced compared to a patient which has not received DHA.
16. The method of any preceding claim wherein said patient is protected against peripheral artery disease associated with both early type II and pre-type II diabetes.
17. A method for treating diabetes comprising administering about 500 mg or more of DHA over a twenty-four hour period to an individual with a HbA1c greater than about 6% wherein a reduced amount of an antidiabetic is administered during the same twenty-four hour period to provide a reduced HbA1c or fasting insulin compared to a patient who has not been administered DHA.
18. The method of claims 2 to 17, wherein side effects associated with taking an antidiabetic are reduced when compared to a patient who has not been administered DHA.
19. A method of treating an individual at risk of developing metabolic syndrome comprising:
 - a) assessing an individual to determine if two or more risk factors are present wherein the risk factors are selected from abdominal obesity (men >40" waist, women >35"), high

triglycerides (≥ 150 mg/dL), low HDL cholesterol (men < 40 mg/dL women < 50 mg/dL), high blood pressure ($\geq 130/\geq 85$), small LDL particle size and high fasting glucose (> 110 mg/dL);

b) providing said individual with a dosage of DHA which is greater than about 750 mg/day.

20. The method of any preceding claim wherein said administration of DHA is chronic.
21. The method of any preceding claim wherein the relative amount of glycosylated hemoglobin is reduced without inducing side effects of excessive fatty acid dosing.
22. The method of any preceding claim wherein DHA makes up at least about 70% of the fatty acids administered as a triglyceride oil, free fatty acids, fatty acid alkyl esters or combinations thereof.
23. The method of any preceding claim wherein DHA is administered in a triglyceride oil which contains no other ω -3 PUFA greater than about 4% of total fatty acid.
24. The method of any preceding claim wherein DHA is administered in a triglyceride oil which has an EPA content less than about one-fifth that of DHA.
25. The method of any preceding claim wherein DHA is administered in a food product that contains DHA as a triglyceride oil, free fatty acids, fatty acid alkyl esters or combinations thereof.